WHAT IS CLAIMED IS:

1. An intravascular stent for use in a body lumen, comprising:

a plurality of cylindrical rings aligned along a longitudinal axis, each ring having a) a first, delivery diameter, b) a second, implanted diameter, c) proximal and distal ends defining a generally cylindrical wall extending circumferentially between the proximal and distal ends, and (d) wherein such generally cylindrical wall is defined by a series of undulations of preselected amplitudes which are in turn defined by bar arms that interconnect peaks and valleys, wherein undulations of a relatively large amplitude are separated by at least one undulation of a relatively small amplitude and wherein at least one bar arm interconnecting a peak of each large amplitude undulation with a valley of a small amplitude undulation is non-linear; and

at least one link connecting each cylindrical ring to an adjacent ring to form the stent.

2. The stent of claim 1, wherein said at least one non-linear bar arm has an S-shape.

3. The stent of claim 1, wherein only one bar arm interconnecting a peak of each large amplitude undulation with a valley of a small amplitude undulation is non-linear and wherein all other bar arms are linear.

4. The stent of claim 3, wherein said one non-linear bar arm has an S-shape.

5. The stent of claim 1, wherein said at least one link is non-linear.

6. The stent of claim 5, wherein said link has a Z-shape.

7. The stent of claim 5, wherein said link has a U-shape.

8. The stent of claim 1, wherein said series of undulations defining each cylindrical ring are in phase with respect to said series of undulations of each adjacent ring.

9. The stent of claim 1, wherein said series of undulations defining each cylindrical ring are out of phase with respect to said series of undulations of each adjacent ring.

10. The stent of claim 1, wherein said undulations of a relatively large amplitude are separated by a single undulation of a relatively small amplitude.

11. The stent of claim 10, wherein said at least one non-linear bar arm has an S-shape.

12. The stent of claim 10, wherein only one bar arm interconnecting a peak of each large amplitude undulation with a valley of a small amplitude undulation is non-linear and wherein all other bar arms are linear.

13. The stent of claim 12, wherein said one non-linear bar arm has an S-shape.

14. The stent of claim 10, wherein said series of undulations of each cylindrical ring are in phase with said series of undulations of each adjacent ring.

15. The stent of claim 10, wherein two links connect adjacent rings.

16. The stent of claim 15, wherein said links are non-linear.

17. The stent of claim 16, wherein said links each have a Z-shape.

18. The stent of claim 16, wherein said links extend between a peak and a valley of adjacent rings.

19. The stent of claim 1, wherein said undulations of relatively large amplitude are separated by two undulations of a relatively small amplitude.

20. The stent of claim 19, wherein said at least one non-linear bar arm has an S-shape.

21. The stent of claim 19, wherein only one bar arm interconnecting a peak of each large amplitude undulation with a valley of a small amplitude undulation is non-linear and wherein all other bar arms are linear.

22. The stent of claim 21, wherein said one non-linear bar arm has an S-shape.

23. The stent of claim 19, wherein said series of undulations of each cylindrical ring are out of phase with respect to said series of undulations of each adjacent ring.

24. The stent of claim 19, wherein two links connect adjacent rings.

25. The stent of claim 24, wherein said links are non-linear.

26. The stent of claim 25, wherein said links each have a U-shape.

27. The stent of claim 25, wherein each of said links extend from a non-linear bar arm of a cylindrical ring to an adjacent cylindrical ring.

28. The stent of claim 27, wherein each of said links extends from only one non-linear bar arm.